

Appendix A: Mitigation Measures

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The National Park Service places a strong emphasis on avoidance, minimization, and mitigation of potential impacts. To help ensure that construction and/or operation of the proposed action protects natural and cultural resources and the quality of the visitor experience, protective measures would be developed and implemented. The National Park Service would implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and are achieving their intended results. No mitigation measures are proposed for Alternative 1.

These Mitigation Measures would apply to all of the action alternatives identified in the Marine Mammal Center Site and Improvements Project Environmental Assessment.

General

Construction Staging Plan

A Construction Staging Plan shall be submitted for NPS review and approval prior to commencement of any excavation, demolition, removal, construction, or alteration of any site or structure. The Construction Staging Plan shall include information on schedule of work by dates and location where work would be performed, safety procedures, traffic management, noise mitigation, equipment to be used and procedures to be followed in the execution of work, solid and hazardous waste management, staging areas, clean-up, progress reports, complaint review process, and other areas of concern.

Annual Report

Under the Cooperative Agreement between the NPS and The Center, The Center will submit an Annual Report that will include things such as a description of services and programs, number of annual visitors, number of special event attendants, an annual maintenance plan, and sustainability program update.

Water Resource Measures

Coordinate with the National Park Service regarding construction and maintenance of the new water system, sewer system and stormwater system. Particularly coordinate timing and rate regarding initial filling of facilities and demand and releases during peak use periods.

Water Conservation. Water saving devices, including low-flush toilets and low maintenance/drought tolerant landscaping shall be used.

Stormwater Management

Develop and implement a comprehensive stormwater pollution prevention plan for construction activities that complies with federal and state regulations and addresses all aspects of stormwater pollution prevention. The stormwater pollution prevention plan will be submitted to the park for review/approval prior to construction activities.

The storm water pollution prevention plan will include such measures as, but is not limited to, the following:

- Measures to control erosion, sedimentation, and compaction. Use of silt fences, sedimentation basins, etc. in construction areas to reduce erosion, surface scouring, and discharge to water bodies.
- To the extent possible, schedule the use of mechanical equipment during periods of low precipitation to reduce the risk of accidental hydrocarbon leaks or spills. When mechanical equipment is necessary outside of low precipitation periods, use National Park Service–approved methods to protect soil and water from contaminants.
- Dispose of volatile wastes and oils in approved containers for removal from construction sites to avoid contamination of soils, drainages, and watercourses.
- Inspect equipment for hydraulic and oil leaks prior to use on construction sites, and implement inspection schedules to prevent contamination of soil and water.
- Keep absorbent pads, booms, and other materials on site during projects that use heavy equipment to contain oil, hydraulic fluid, solvents, and hazardous material spills.
- Other Structural BMPs – Structural BMPs shall minimize discharge to the storm sewer system and control run-off quality to the maximum extent practical.
- With guidance from the NPS The Center will monitor the effects of runoff to Rodeo Lake and Rodeo Lagoon from the new parking areas.

Stormwater pollution prevention measures will be developed and implemented that include the following:

- Utilize structural best management practices (BMP's)(oil filters, biofilters, control of run-on and run-off, etc.) and operational best management practices (including spill prevention and control) throughout the project design. Install in parking lots and drainage facilities easily cleanable catch-basins, debris screens, and grease separators or similar water quality protection devices.
- All buildings and parking areas shall be designed to provide the maximum opportunity for surface run-off to be directed away from sensitive habitat and infiltrate the soil. Use of vegetated swales and planting areas shall be utilized to reduce run-off and remove contaminants. Parking lot drainage will be designed so that run-off is fed into the storm water system, not the sewer system.
- During heavy rainfall events the operational capability to interrupt rainfall flowing to the pen enclosure area drains will be utilized either by using the 40,000 gallon cetacean pool as an equalization basin or another dedicated comparable size basin to regulate flow of rainfall under extreme conditions. The Center will coordinate with NPS staff and monitor these new facilities during storm events.

Impervious Surfaces:

The Center will work with NPS to arrange for mitigation for new pavement or hardened surfaces added within the project area. This could include removal of pavement, soil decompaction, or similar measures.

Ensure that newly constructed impervious surfaces prevent increased water runoff volume and velocity, reduced water quality, and reduced water infiltration to the greatest extent feasible.

Biological Resource Protection Measures

Native Plant Habitat

For areas identified for native plant restoration, site-specific Vegetation Restoration Action Plans will be prepared for review and approved by NPS prior to implementation. These plans will also include prescriptions for weed control and ongoing maintenance until the sites are fully established. Native plant materials will be obtained from the local watershed and propagated at the NPS native plant nursery for use in these restoration projects. Appropriate mitigations for the loss of areas (such as those paved over for construction of a new parking lot), will include the removal of exotic species as well as restoration of native plant habitat acreage within the project area.

Protection for Nesting Birds

General construction activities and the removal of trees could impact nesting birds. To the extent practicable, construction activities shall be performed from September through February to avoid the general nesting period for birds. If construction cannot be performed during this period, pre-construction surveys shall be performed by a qualified biologist between January through the period that breeding season construction begins to locate any active nests prior to the start of construction and prior to the removal of any tree. If active nests are observed, a 500-foot buffer shall be established around trees with raptor nests and a 250-foot buffer around trees with other nests. Smaller buffers may be used if deemed appropriate by the NPS. Construction activities shall avoid buffered trees and no tree can be removed until young have fledged or the nest has is otherwise abandoned. Tree removals will be scheduled outside of the breeding season.

Protection for Wetlands

Construction of the ring road will result in the permanent fill of approximately 0.08 acres of jurisdictional wetland. Obtaining a Section 404 permit from the U.S. Army Corps of Engineers may be necessary prior to construction. The type of permit required is dependent upon the project and the amount of fill. The Corp may require mitigation to offset permanent impacts to waters of the U.S. as a result of the construction of the ring road. NPS may require mitigation as well which will be near the project vicinity, will be in-kind if practicable, and will be at a minimum 1:1 ratio.

Protection for Special Status Species

CNDDDB and FWS species lists for the project vicinity list a total of 6 special status plants with at least a potential to occur within the project area, specifically within the coastal scrub community and in and around Rodeo Lagoon and Lake. To ensure no special-status plant species exist within the project boundaries, appropriately-timed rare plant and mission blue butterfly host plant surveys will be conducted by a qualified biologist. If rare plants are found, appropriate avoidance measures, including altering the design of the remote parking area will be incorporated into final project design. Design and construction of new facilities shall avoid disturbing sensitive habitat where rare and endangered plants or mission blue butterfly habitat exist. Measures shall be taken to direct human access away from such habitat. Other mitigation included in other parts of this EA (particularly under water resources) will also protect these species.

Geology, Solis and Seismicity Protection Measures

Protection from Settlement Impacts

The recommendations of the report on the site-specific geotechnical investigation conducted for this project (Cleary Consultants, Inc., 2003) will be implemented as part of the project. Report recommendations include site preparation requirements, fill placement and compaction parameters, requirements for subsurface and surface drainage. The report also addresses settlement impacts that could occur due to over-excavation of existing fill material and loose soil and recommends its replacement with approved, engineered, on-site soils or imported non-expansive fill. The report also includes specific recommended limitations for foundations and retaining walls.

Excavation Activities

When possible, excavated materials will be reused on site or within the Park. Any remainder that cannot be reused will be disposed on site. If onsite disposal is not possible appropriate disposal options will be used.

Adjacent uphill slopes will be monitored for failure when work is being performed along the toe of the slope on the north side of the site.

Landslide and Slope Stability

The recommendations of the geotechnical report for this project (Cleary Consultants, Inc., 2003) will be implemented as part of the project. NPS approved engineers will review the foundation and grading plans and be retained to provide soil engineering observation and testing services during the grading and foundation installation phases of the project. NPS approved engineers will approve final plans and conduct observations of the earthwork and foundation construction, as determined appropriate by this engineer. Report recommendations that address slope stability and landslide impacts, include (but are not limited to) limiting the steepness of new permanent cut and fill slopes to no more than 2:1 (horizontal to vertical); placing benches on fill slopes that are steeper than 6:1 (horizontal to vertical); diverting surface runoff away from the top of slopes and toward a suitable drainage collection system; placing a subsurface drainage system between the new perimeter road and the slide area in the northwestern corner of the site; and design parameters for retaining walls.

Protection from Seismic Hazards

The recommendations of the geotechnical report for this project (Cleary Consultants, Inc., 2003) will be implemented as part of the project. These recommendations include the design and construction of buildings and tanks in accordance with current standards for earthquake-resistance, and inclusion of measures to minimize the movement of objects within buildings and minimize the effects of such movement. The geotechnical report also provides seismic design parameters of the 1997 Uniform Building Code that can be used in lateral force analyses at the site.

Additional Study

NPS approved engineers shall review the final design plans for the project and observe earthwork and foundation installation during construction. Mitigation Measures stated above shall apply and be implemented to the design and construction of all project components.

Transportation

Prepare a construction routing plan for review and approval by NPS prior to initiating any site preparation and construction activities.

Mitigations for minimizing the potential impact of construction vehicles are to:

- Develop a project construction schedule to limit construction vehicle activity to weekdays, if possible. Weekend activity, if necessary, shall be conducted before 11 a.m.
- During periods of heavy truck activity exiting The Center, install a temporarily stop sign to create an all-stop intersection for the duration of construction or submit an alternate control plan for NPS approval in order to allow trucks to pass safely.

Transportation Demand Management. The MMC shall comply with the provisions of any future NPS TDM program for the Marin Headlands area. Provisions will be made so that carpools and vanpools receive preferential parking.

Event Coordination. Up to six times a year The Center holds events that require additional parking on a short-term basis. In advance of these special events, in order to avoid peak traffic conditions, The Center will be required to coordinate with GGNRA's Special Parks Uses Group.

Cultural Resources Protection Measures

Mitigation measures for cultural landscape resources include measures to avoid impacts, designing new development to be compatible with surrounding historic resources, and screening new development from surrounding historic resources.

Additional measures to largely offset potential impacts to cultural resources are listed below.

- Archeological monitoring - If previously unknown cultural resources are encountered during construction, temporarily suspend work in the immediate area to document discovered resources according to National Park Service standards.
- Guidelines for compatible new construction – Historic Compatibility Guidelines for New Facilities at the Marine Mammal Center will be prepared as part of this project and will be subject to review and approval by NPS. All new designs shall be reviewed for compatibility with the cultural landscape of the Historic District per the Standards for the Treatment of Historic Properties. Design of all new construction, including site work, shall be compatible in terms of architectural elements, scale, massing, materials, and orientation. Review and approval will be carried out by NPS staff as stipulated in the GGNRA Programmatic Agreement in order to reduce the effects of the proposed action on the National Register District.
- Undertake all treatments within cultural landscapes in keeping with the *Secretary of The Interior's Standards for the Treatment of Historic Properties*.

Visual Resources

Design of new buildings shall be consistent with the Historic Compatibility Guidelines. Existing visual screening will be retained as deemed appropriate by NPS. This screening currently consists of invasive Monterey pines which thus must be managed as described below. Where screening is removed for purposes of construction activities, if requested by NPS it will be replanted with less invasive trees that still provide appropriate screening. Maintenance of the screening will require active removal of seedlings and saplings that spread from these invasive trees. Over the long-term, if the trees are replaced, they will be replaced with less invasive species that still provide appropriate screening.

Hazardous Materials Measures

Hazardous Materials/Waste Management Plan

The MMC shall submit for NPS review and approval plans and procedures for the management of hazardous materials and spill response consistent with current GGNRA standard operating procedures for hazardous waste management and the GGNRA Spill Response Plan. The following would be included in this plan:

- Store and use all hazardous materials in compliance with federal regulations. All applicable Materials Safety Data Sheets would be kept on site for inspection.
- Comply with all applicable regulations and policies during the removal and remediation of asbestos, lead paint, and polychlorinated biphenyls.
- Providing on-site air monitoring during all abatement activities and perimeter monitoring to ensure no contamination of work or adjacent areas.
- Post-demolition testing of soil to assure that soil at the site is not contaminated by lead based paint.
- Properly dispose of discarded containers of fuels and other chemicals.
- During routine maintenance of construction equipment, properly contain and remove grease and oils.
- Avoid overtopping construction equipment fuel gas tanks.

Air Quality/Dust Abatement Measures

Dust abatement measures would be developed and implemented that include the following: Cover and/or seal truck beds and stockpiles to minimize blowing dust or loss of debris

- Limit truck and related construction equipment speeds in active construction areas to a maximum of 15 miles per hour and strictly adhering to park regulations and posted speed limits in other areas while inside park boundaries
- Maintain adequate dust suppression equipment and use clean water to control excess airborne particulates at staging areas, active construction zones, and unpaved roads leading to/from active construction areas

Noise Abatement Measures

Noise abatement measures would be developed and implemented that include the following:

- Perform all on-site noisy work above 76 A-weighted decibels (dBA) (such as the operation of heavy equipment) between September to March to minimize disruption to rescued marine mammals and related education programs. Within these months limit noisy work to week-days to avoid impacts to recreational users in the area.
- During periods of concentrated construction potentially halt or limit on-site education programs to avoid noise exposure.
- Ensure that all construction equipment has functional exhaust/muffler systems.
- Submit a construction work plan/schedule that minimizes construction-related noise in noise-sensitive areas to The Center as well as the park for review/approval prior to commencement of construction activities.
- Use hydraulically or electrically powered construction equipment, when feasible.
- Locate stationary noise sources as far from sensitive receptors as possible.
- Limit the idling of motors except as necessary (e.g., concrete mixing trucks).

Visitor Use

Visitor protection measures would be developed and implemented by contractors that include the following:

- Develop and implement a visitor protection plan for park review/approval that:
 - Provides procedures for managing staging areas to restrict public access and maintain site safety
 - Ensures that visitors are safely and efficiently routed around construction areas at The Center
 - Outlines measures to largely offset the potential for public exposure to noxious materials or contaminants that may be present during construction in the project area (i.e., by providing established and maintained walkways across the site, covering walking paths with clean soil and asphalt, and providing barrier fencing along trails)
- Provide protective fencing enclosures around construction areas to protect public health and safety
- Visitor Use and Accessibility – all new public facilities shall be made accessible to people of all ages, backgrounds, and abilities. The goals of barrier-free accessibility shall be met and an emphasis shall be placed on affording visitors with disabilities the same experiences and opportunities as other visitors. Access improvements shall conform to the requirements of the Uniform Federal Accessibility Standards and the Americans with Disabilities Act.
- Interpretive Program – The Center shall include an expanded interpretive program from the current one in place to convey messages to visitors about park-related themes as well as The Center’s mission. New exhibits and programs shall be developed in consultation with NPS interpretive staff.

Utility Measures

The following mitigation measures would be implemented to largely offset potential impacts to park utilities:

- Schedule peak water usage at non-peak times of day. In addition washdowns & water system cycling shall not occur during a peak storm events.
- Verify utility locations by contacting the Underground Services Alert prior to the start of construction.
- Observe all local, state, and federal standards in designing utility systems.
- Promptly reconnect utility services that are interrupted because of construction activities and provide advance notification to all residents, concessioners, and others if utility service would be disrupted.
- Utilities shall, to the extent possible, be located underground or screened from principle viewing areas. Placement of above-ground appurtenances shall be screened from view to the fullest extent possible.

Night Sky Measures

Measures would be implemented to minimize effects of night lighting on the ability to view the night sky in the project area that include the following:

- Avoid construction activities after sunset
- Direct and shield night lighting associated with construction equipment to minimize light scatter effects
- Design interior and exterior lighting to prevent escaped light
- Use downward-facing and unobtrusive luminaries at facilities and building entrances and exits; confine light spread within project boundaries.